



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,957	08/10/2006	Takeo Suda	294634US2PCT	9766
22850	7590	09/28/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			READY, BRYAN	
ART UNIT	PAPER NUMBER			
	2852			
NOTIFICATION DATE	DELIVERY MODE			
09/28/2009	ELECTRONIC			

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,957	<b>Applicant(s)</b> SUDA ET AL.
	<b>Examiner</b> Bryan P. Ready	<b>Art Unit</b> 2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 10 August 2006.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 71-86 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 71-86 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 10 August 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/G6/08)  
 Paper No(s)/Mail Date See Continuation Sheet

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date  
:20090918/20090903/20081209/20080617/20080415/20071214/20060810.

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

2. Claims 72, 77, and 86 are objected to because of the following informalities:  
Claim 72, lines 6-7, should be amended to recite 'arranged on a downstream side';  
Claim 77, line 6, should be amended to recite 'width of bar-shaped lubricant'; Claim 86, lines 7-8, should be amended to recite 'arranged on a downstream side'. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 72-74 and 85-86 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugiyama (JP 2001-305907).

Regarding Claim 72, Sugiyama discloses (Abstract; Drawings 1-3) an image forming apparatus comprising (Drawing 1): a latent image carrier (1) that is rotatable

(direction A, Drawing 3) and configured to carry a latent image; a cleaning blade (15a) that cleans toner remaining on a cleaning area on the latent image carrier (1); and a lubricant applying element (82) that is arranged on a downstream side of the cleaning blade (15a) with respect to a direction of rotation of the latent image carrier (see Drawing 3), and that applies a lubricant to a lubricant applying area on the latent image carrier (paragraph 37), wherein the cleaning area and the lubricant applying area overlap (see Drawing 3).

Regarding Claim 73, Sugiyama discloses the cleaning area and the lubricant applying area are substantially the same area on the latent image carrier (Drawing 3).

Regarding Claim 74, Sugiyama discloses the lubricant applying element (82) is a brush roller (paragraph 37) and the lubricant is a bar-shaped lubricant (Drawing 3, paragraphs 34-36), and the image forming apparatus includes a mechanism that rotates the brush roller so that the brush roller scrapes off the bar-shaped lubricant and applies scraped lubricant to the latent image carrier (paragraphs 34-36).

Regarding Claim 85, Sugiyama discloses (paragraph 28) a process cartridge (31) that integrally supports the latent image carrier (1) and a cleaning device (15), and that is detachably mounted (paragraph 28).

Regarding Claim 86, Sugiyama discloses (Drawing 3; paragraph 28) a process cartridge (31) to be coupled to an image forming apparatus (Drawing 2), comprising: an image carrier (1) on which a latent image is formed; and a process unit (15) that includes a lubricant applying device (82) arranged on a downstream side of a cleaning device with respect to a direction of rotation (A) of the image carrier (1), and that applies

a lubricant to a lubricant applying area on the image carrier (1), wherein a cleaning area and the lubricant applying area overlap (see Drawing 3), wherein the process cartridge (31) integrally supports the image carrier (1) and the process unit (15), and is detachable from the image forming apparatus (paragraph 28).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 81-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama (JP 2001-305907) in view of Murakami et al. (US 2004/0136763).

a. Sugiyama discloses the elements as outlined in section 4 above. Additionally, Sugiyama discloses (Drawing 3) a smoothing blade (85), wherein the cleaning blade

Art Unit: 2852

(15a) is provided on an upstream side in the direction of rotation (A) of the latent image carrier (1), and the smoothing blade (85) is provided on a downstream side.

b. Sugiyama differs from the instant claimed invention in not disclosing the claimed subject matter of Claims 81-84, including: toner shape factor SF-1 from 100-180, toner shape factor SF-2 from 100-180; volume-average particle size (Dv) from 3-8 micrometers, dispersion ratio (Dv/Dn) from 1.00 to 1.40; ratio between minor and major axis from 0.5 to 1.0, ratio between thickness and minor axis from 0.7 to 1.0, and a relation of major axis  $r_1$ , minor axis  $r_2$ , and thickness  $r_3$  to satisfy  $r_1 \geq r_2 \geq r_3$ ; and the toner being obtained by allowing a toner material solution to undergo reaction in an aqueous medium, the solution obtained by dissolving or dispersing at least a polymer having an enabling reaction with a compound containing active hydrogen group, and a release agent in an organic solvent.

c. Murakami et al. disclose a toner comprising the following characteristics and derivation: toner shape factor SF-1 from 100-180, toner shape factor SF-2 from 100-180 (paragraph 109); volume-average particle size (Dv) from 3-8 micrometers, dispersion ratio (Dv/Dn) from 1.00 to 1.40 (paragraph 13); ratio between minor and major axis from 0.5 to 1.0, ratio between thickness and minor axis from 0.7 to 1.0, and a relation of major axis  $r_1$ , minor axis  $r_2$ , and thickness  $r_3$  to satisfy  $r_1 \geq r_2 \geq r_3$  (paragraph 110); and the toner being obtained by allowing a toner material solution to undergo reaction in an aqueous medium, the solution obtained by dissolving or dispersing at least a polymer having an enabling reaction with a compound containing active hydrogen group, and a release agent in an organic solvent (paragraphs 70-71).

Art Unit: 2852

d. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ toner having the physical characteristics disclosed by Murakami et al. for the toner of the image forming apparatus of Sugiyama, for the benefit of a toner with appropriate fluidity, and of conventional size and manufacture.  
(Murakami et al.; paragraphs 109-110)

8. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama (JP 2001-305907) in view of Koike et al. (US 2004/0202495).

a. Sugiyama discloses the elements as outlined in section 4 above.

b. Sugiyama differs from the instant claimed invention in not disclosing the latent image carrier to have a frictional coefficient of 0.4 or less.

c. Koike et al. disclose (paragraphs 56-57) a latent image carrier having a frictional coefficient of 0.4 or less.

d. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the latent image carrier of Sugiyama with a frictional coefficient of 0.4 or less, as disclosed by Koike et al., for the benefit of decreasing a probability of curling or deformation of a cleaning blade which contacts an image carrier.  
(Koike et al.; paragraph 57, lines 1-7)

9. Claim 80 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama (JP 2001-305907) in view of Kaname (JP 07-005794).

- a. Sugiyama discloses the elements as outlined in section 4 above.
- b. Sugiyama differs from the instant claimed invention in not disclosing the cleaning blade to include a side seal for preventing toner scattering, and the lubricant applying area to be adjustable based on a position of the side seal.
- c. Kaname discloses (Abstract; Drawings 1-3; paragraphs 8-13) a cleaning blade (5) to include a side seal (6) for preventing toner scattering (Abstract, Constitution, lines 1-5), and the cleaning blade (5) adjustable (via positioning parts 12 and 14) based on a position of the side seal (6).
- d. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ the adjustable cleaning blade and seal concepts disclosed by Kaname in the image forming apparatus of Sugiyama for the benefit of decreasing the occurrence of toner leak by ensuring proper seal positioning. (Kaname; Abstract, Purpose, lines 1-4)

10. Claims 77-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama (JP 2001-305907) in view of Kanagawa (US 2004/0109711).

- a. Sugiyama discloses the elements as outlined in section 4 above.
- b. Sugiyama differs from the instant claimed invention in not explicitly disclosing: the width of the bar-shaped lubricant to be equal to the width of the brush roller; and the

width of a charged portion applied on the latent image carrier to be equal to the width of lubricant applied.

c. Kanagawa discloses (Figures 1-3): the width of a bar-shaped lubricant (53) to be equal to the width of a brush roller (51; see Fig. 3); and a primary charging member (3) which uniformly charges the surface of a latent image carrier (2) prior to exposure and formation of an image for transfer to a sheet of paper (paragraph 51).

d. Regarding Claim 77, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to make equal the widths of the brush roller and bar-shaped lubricant members of Sugiyama, as suggested by Kanagawa, since such a configuration would merely represent conventional technique, and yield predictable results, namely, a lubricating brush that uniformly supplies lubricant to a latent image carrier.

e. Regarding Claim 78, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that a latent image charge width should be (at most) equal in width to an area of applied lubricant, since the charge width is a width which may attract toner, for image formation after exposure, which the cleaning blade must remove when primary transfer to a recording sheet is incomplete. Therefore, one of ordinary skill in the art would appreciate that if lubricant were not to be applied across at least a charge width, that areas subject to toner deposition may be cleaned by the cleaning member with insufficient lubrication, causing cleaning blade damage, image defects and the like.

11. Claims 75-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama (JP 2001-305907) in view of Mishina et al. (JP 2000-330443).

- a. Sugiyama discloses the elements as outlined in section 4 above.
- b. Sugiyama differs from the instant claimed invention in not explicitly disclosing: the width of the brush roller to be equal to the width of the smoothing blade; and a width of the brush roller to be equal to the width of the cleaning blade.
- c. Mishina et al. disclose (Drawings 1-4): the width of a lubricating supplying means (12; *alternatively, a rotary brush embodiment; paragraph 14*) to be equal to the width of a smoothing blade (13); and a width of the lubricating supplying means (12) to be equal to the width of the cleaning blade (11).
- d. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to employ equal widths for the cleaning blade and smoothing blade of Sugiyama, as suggested by Mishina, since both elements are cooperative in the cleaning-lubricating cycle, and further, to provide a lubricating element equal in width to both blades, since a smaller lubricating width would create non-uniformity in lubrication, and since a lubricating width larger than a cleaning width required for lubrication would be unnecessary. One of ordinary skill in the art would appreciate the configuration of blade widths illustrated by Mishina et al. as representing an ideal configuration, which may be applied in conventional cleaning systems as desired.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan P. Ready whose telephone number is (571) 272-9018. The examiner can normally be reached on Mon.-Fri., 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David M Gray/  
Supervisory Patent Examiner,  
Art Unit 2852

BPR